

OMNI-VI Model 563

TEN-TEC



The OMNI-VI is the culmination of two decades of engineering in high performance amateur transceivers. It is designed to meet the needs of serious DXers and contesters. OMNI-VI embodies the best suggestions from owners of its highly successful predecessor, the OMNI-V, in addition to recommendations from a panel of expert DXers and contesters.

Experts agree that crystal mixing can't be beat for optimum receiver performance. There is nothing on the market at any price to match OMNI-VI. The bottom line - receive weak signals under the worst band conditions, signals our competition can't hear! Phase noise is essentially eliminated as a factor in receiver performance.

OMNI-VI eliminates interference from even the closest signals. This superior receiver selectivity is achieved by cascading optional filters from both the 6.3 MHz and 9 MHz I-Fs. Up to 3 accessory filters can be added at the 6.3 MHz I-F and one at 9 MHz providing 20 - 24 poles of filtering !

DSP, the latest "Digital Signal Processing" technology, is incorporated to provide real benefits for both SSB and CW. In SSB the Automatic Notch Filter instantly eliminates interfering carriers in the pass band.

No matter how many, it gets them all. In CW the transmit offset is programmable, 400 to 990 Hz., and sidetone pitch automatically follows. All front panel controlled including sidetone volume.

CW DSP filter - reduces fatigue by eliminating higher frequency noise and interference. You set the amount of low pass filtering - 600 to 1400 Hz in 5 steps.

Running at 20 MHz, OMNI-VI has the fastest, most powerful microprocessor yet in a TEN-TEC transceiver to deliver the latest digital features. Changing frequency has never been easier. In addition to manual tuning, OMNI-VI offers direct keypad entry, single button band change and band stacking registers. Main tuning knob is die cast aluminum coupled to a high resolution encoder providing fast, smooth feel with adjustable torque.

The microprocessor provides lightning fast QSK for CW and AMTOR and adjustable delay on SLOW QSK. Look at this lineup of other digital features: dual VFOs, +/-10 KHz RIT/XIT, full time clock, iambic keyer, 100 memories and scratch pad. Four ways to use memories are provided: Memory Scroll, Memory Tune, Channel Scan and Band Scan.

OVEN STABILIZED TIME BASE - each band crystal is phase locked to the timebase for extreme frequency stability. A real asset for net operation and RTTY/AMTOR !

"SPORT" PC Interface (Serial port operation of receive and transmit) is an enhanced high speed interface. It runs up to 19200 baud for minimum "wait" time under PC control. Two choices of output ports are provided. "SPORT" is compatible with most major software.

Customize these OMNI-VI features to fit your personal preference:

- Frequency Entry Priority - Direct keypad entry or single button band select.
- Clock - Full time or on-demand
- Display Intensity - 16 levels
- Audio Keypad Annunciator - ON or OFF
- PC Interface Speed - 1200 to 19200 baud
- Front Panel Control of VOX, sidetone, keyer speed and weight

Full one year warranty

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OMNI-VI ACCESSORIES

Model 961, Power Supply/Speaker - Matches OMNI-VI, 115/230 VAC, 50/60 Hz input. 13.8 VDC, 22 A output. Resetting electronic latching circuit breaker limits current to protect transceiver. Output cable is 4 pin AMP MATE-N-LOC which connects directly to OMNI-VI.

Model 257, Voice Synthesizer - Plug-in board announces frequency displayed when VOICE button is pressed.

Model 259, ALC Annunciator - Designed for vision impaired operators. When MIC gain is advanced to the proper level, a beep sounds.

Model 301, Remote Tuning Control - a duplicate of main tuning knob on transceiver may be moved around operating table or held in your hand to leisurely tune the band.

6.3 MHz I-F Filters

Model 282 - 250 Hz, 6 pole ladder CW filter
Model 285 - 500 Hz, 6 pole CW
Model 288 - 1.8 KHz, 8 pole SSB

9 MHz I-F Filters

Model 216 - Special 500 Hz, 6 pole, centered for digital mode
Model 217 - 500 Hz, 8 pole ladder CW filter
Model 218 - 1.8 KHz, 8 pole SSB
Model 219 - 250 Hz, 6 pole CW
Model 220 - 2.4 KHz, 8 pole SSB

GENERAL SPECIFICATIONS

MODES: USB, LSB, CW, FSK or AFSK, FM built-in
FREQUENCY RANGE: All ham bands 160 through 10 meters, Twelve 500 KHz segments with 30 KHz overshoot at upper and lower band edges.
DISPLAY: 7 digit to 10 Hz resolution, .56" LED, 2 secondary .3" displays for clock, memory channel and offset.
FREQUENCY CONTROL: LO generated with a crystal oscillator mixed with a low noise 4.97 - 5.53 MHz phase locked loop.

OFFSET TUNING: +/- 9.99 KHz, receive and transmit.
DUAL VFOs with SPLIT mode.
MEMORIES: 100 duplex memories, battery backup, one scratch pad
PC INTERFACE: Serial port operation of receive and transmit. Includes two line and RS-232 interface. Runs at 1200, 2400, 4800, 9600 or 19200 baud.
FREQUENCY ACCURACY: +/- 50 Hz @ 25 degrees C.
ANTENNA: 50 ohm unbalanced
REMOTE BAND SWITCHING: Selects antenna or

other station accessories.
POWER REQUIRED: 2 A receive, 20 A transmit @ 12 - 14 VDC
CONSTRUCTION: 20 G10 epoxy glass PC boards, most field replaceable. Extruded aluminum front panel, aluminum chassis, texture painted top & bottom, snap up stainless steel bail.
DIMENSIONS: HWD 5.75" x 14.75" x 17" - 14.6 x 37.5 x 43.2 cm
WEIGHT: 16 lbs - 7.25 kg.

TRANSMITTER

RF OUTPUT: 0 - 100 watts, ALC stabilized
DC INPUT: Maximum 250 watts @ 14VDC. 100% duty cycle for up to 20 minutes. Continuous duty with customer supplied air cooling of rear panel heat sink.
MICROPHONE INPUT: 200 - 50K Ohms, accepts microphones with 5mV (-62dB) output. Polarizing voltage for electrets provided
SPEECH PROCESSOR: Adjustable compression level.
T/R SWITCHING: PTT or VOX on SSB, switchable FAST or SLOW QSK on CW, delay on SLOW is adjustable.

IAMBIC KEYS: adjustable 8 - 40 WPM, type A or B, weight adjustable from keypad.
CW OFFSET: programmable 400 - 990 Hz, DSP generated, sidetone automatically matches offset, volume adjustable independent of AF gain control.
FSK SHIFT: 170 Hz.
FM DEVIATION: +/- 5 KHz
METERING: Switchable to forward power, SWR, collector current or audio processing level on SSB.
SSB GENERATION: Balanced modulator followed by

9 MHz, 8 pole crystal ladder filter.
CARRIER SUPPRESSION: 60 dB typical
UNWANTED SIDEBAND SUPPRESSION: 60 dB typical at 1.5 KHz tone.
THIRD ORDER INTERMOD: 30 dB below two tone at 100 watts PEP.
SPURIOUS OUTPUT: Better than 45 dB below peak power output.

RECEIVER

SENSITIVITY: .15 uV for 10 dB signal to noise ratio at 2.4 KHz bandwidth. In FM, .3 uV for 12 dB SINAD at 15 KHz bandwidth.
SELECTIVITY: Standard 16 pole filter, 20 to 24 poles cascaded depending on options selected.

Selected	Filter	-6 dB BW	-60 dB	Shape Factor
Standard	2.4 KHz	2.4 KHz	4.50 KHz	1.87:1
Optional	1.8 KHz	1.8 KHz	3.40 KHz	1.89:1
"	500 Hz	500 Hz	1.40 KHz	2.80:1
"	250 Hz	250 Hz	850 Hz	3.40:1
Standard	FM	15 KHz	30.0 KHz	2.00:1

DYNAMIC RANGE: 97 dB @ 2.4 KHz bandwidth at 20 KHz spacing, 100 dB + with CW filters.
THIRD ORDER INTERCEPT: + 10 dBm
NOISE FLOOR: -133 dBm @ 2.4 KHz bandwidth
PHASE NOISE: -122 dBc @ 1 KHz, -138 dBc @ 20 KHz.
S-METER: Calibrated to 50 uV at S9.
ATTENUATOR: -20 dB
PASSBAND TUNING: +/- 1.2 KHz
I-F FREQUENCIES: 1st I-F 9 MHz, 2nd I-F 6.3 MHz (passband tuning IF), 2nd I-F for FM 455 KHz.

NOISE BLANKER: adjustable threshold
AUTOMATIC DSP NOTCH FILTER: Eliminates multiple heterodynes, notch depth automatically selected for each.
MANUAL NOTCH FILTER: 250 Hz to 2.2 KHz, greater than 50 dB
CW DSP FILTER: Low pass audio filter selectable in 5 steps, 1400 Hz, 1200 Hz, 1000 Hz, 800 Hz, 600 Hz. or may be disengaged.
RECEIVE RECOVERY TIME: less than 20 ms

including split mode
SQUELCH SENSITIVITY: Less than .6 uV
IMAGE REJECTION: > 90 dB
I-F REJECTION: > 90 dB
AUDIO: 1.5 watts @ 4 ohms with less than 2% distortion, built-in speaker, separate fixed output 1 mw @ 600 ohms.
SEPARATE RX ANTENNA INPUT: 50 ohm phono jack, front panel selectable.

...America's Best!



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